

### In the Claims

Claims 1-7 (canceled)

8. (previously amended) The method of Claim 34, wherein said purified nucleic acid sequence comprises the sequence between nucleotides 284 to 1477 of the sequence set forth in SEQ ID NO: 1 or the complement thereof.

Claims 9-31 (canceled)

32. (currently amended) A method for screening substances capable of modulating the activity potassium current of a purified TWIK-related arachidonic acid-activated protein ("TRAAK potassium channel protein") which comprises:

- (a) transferring a purified nucleic acid sequence or a functionally equivalent derivative thereof that encodes the TRAAK potassium channel protein into a cellular host;
- (b) culturing the host under conditions for expression of TRAAK potassium channel protein;
- (c) reacting selected amounts of the substance to be screened with the cellular host; and
- (d) measuring the effect current of the substance to be screened on a potassium channel's current expressed by the cellular host.

33. (currently amended) A method for screening substances capable of modulating the activity potassium current of a purified TWIK-related arachidonic acid-activated protein ("TRAAK potassium channel protein") which comprises:

- (a) transferring a purified nucleic acid sequence that encodes the TRAAK potassium channel protein into a cellular host;

channel protein into a cellular host;

- (b) culturing the host under conditions for expression of TRAAK potassium channel ~~protein exclusively in brain, cerebellum, spinal cord and retina neural tissues;~~
- (c) reacting selected amounts of the substance to be screened with the cellular host; and
- (d) measuring the ~~effect~~ current of the substance to be screened on a potassium channel's ~~current~~ expressed by the cellular host.

34. (currently amended) A method of screening substances capable of modulating the ~~activity~~ potassium current of a purified protein which comprises:

- (a) transferring a purified nucleic acid sequence represented by SEQ ID No: 1 that encodes the protein into a cellular host;
- (b) culturing the host;
- (c) reacting selected amounts of the substance to be screened with the cellular host; and
- (d) measuring the ~~effect~~ current of the substance to be screened on a potassium channel's ~~current~~ expressed by the cellular host.

35. (currently amended) A method for screening substances capable of modulating the ~~activity~~ potassium current of a purified protein which comprises:

- (a) transferring a purified nucleic acid sequence represented by SEQ ID No: 2 that encodes the protein into a cellular host;
- (b) culturing the host;
- (c) reacting selected amounts of the substance to be screened with the cellular host; and
- (d) measuring the ~~effect~~ current of the substance to be screened on a potassium channel

Claim 36 (canceled)

37. (currently amended) The method of any of Claims 3432-35, wherein said process screens substances capable of preventing or treating heart disease in mammals.

38. (currently amended) The method of any of Claims 3432-35, wherein said process screens substances capable of preventing or treating central nervous system disease in mammals.

Claims 39-51 (canceled)